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THE MANAGEMENT OF ELECTRONIC RECORDS IN THE 1990'S

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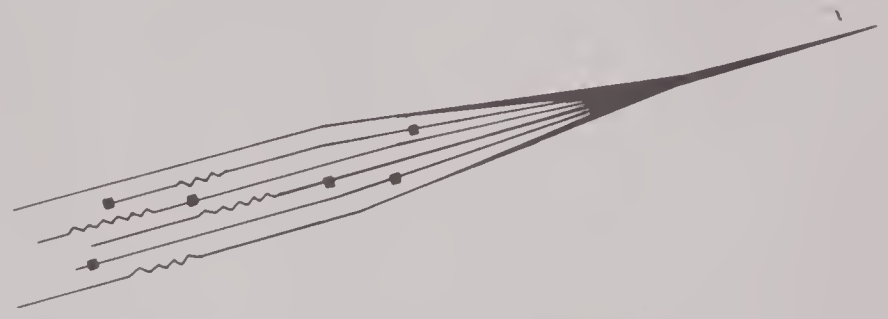

A Report of a Conference Held June 21–23, 1989, Easton, MD

NATIONAL ARCHIVES AND RECORDS ADMINISTRATION
OFFICE OF RECORDS ADMINISTRATION
WASHINGTON, DC
AUGUST 1990

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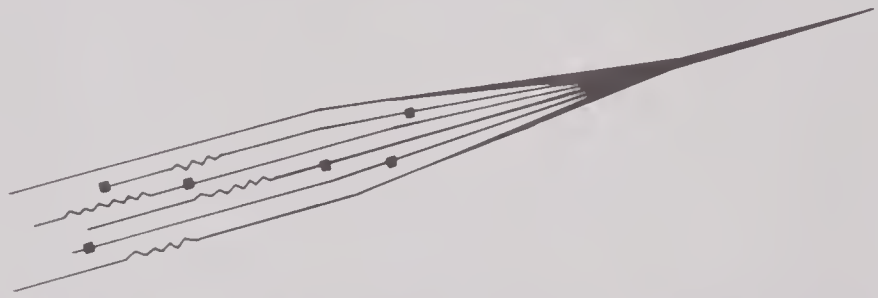

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Executive Summary

In June 1989 a 3-day conference, convened by the National Archives, considered the challenges posed by the increasing use of electronic media to store Federal records. Representatives from all three branches of government and the private sector met to develop a series of recommendations for the management of electronic records in the Federal Government. After introductory sessions the conference broke into six working groups:

- Organizational and Individual Responsibilities
- Corporate Information Management - Mission Information Systems
- Managing Electronic records in the Office Environment
- Legal and Security Issues
- Records Management and the Design and Implementation of Electronic Information Systems
- Collection and Dissemination of Information

At the conclusion of the conference, the recommendations of the working groups were presented. There were several dominant themes among these recommendations including the need to for records managers to participate in the life cycle of automated information systems and the necessity of improving communications and interaction among the various disciplines involved in electronic records management.

Summary of Recommendations

The following is a summary of the recommendations of the conference. This summary takes the recommendations of individual groups, combines those that are related, and groups them by category.

Recommendations relating specifically to the management of electronic records.

1. Integrate records management considerations and procedures throughout the information system life cycle.

    a. Incorporate records management considerations into the "Model Framework for Management Control Over Automated Information Systems" prepared jointly by the President's Council on Management Improvement and the President's Council on Integrity and Efficiency.

    b. Keep the expanded model current and promote its use.

    c. Ensure that electronic information systems are created in such a way as to make it possible to meet requirements for creation, maintenance, and disposition of electronic records.

    d. Include considerations about collection and dissemination of information in systems design.

    e. Promote the incorporation of records management considerations into the information system life cycle.

    f. Develop opportunities for cross-training for data processing and records management staff and awareness training for all others involved in the management of electronic records.

2. Use the technology itself to improve the management of electronic records.

    a. Develop and implement model systems that "embed" records management activities (indexing, storing, disposition, and determining FOIA and Privacy Act status) in processes through which individual documents are created, maintained, and used.

b. Fund the development of model expert system (artificial intelligence) to assist in determining whether a document is a record, how it should be filed, disposed of, released under the FOIA, etc.

3. Clarify legal issues that affect the management and use of electronic records.

   a. Complete development of guidelines on the use of electronic information as evidence.

   b. Develop guidelines on the confidentiality, integrity, and legality of electronic records.

4. Increase funding: With the support of other agencies, NARA should request funding to convert permanent records to archivally acceptable media after transfer to the National Archives.

5. Information dissemination: Agencies should submit inventories of electronic records and information products to GPO, NARA, and NTIS.

Recommendations relating to records management and information resources management (IRM) in general.

1. Include in the Paperwork Reduction Act additional information relating to agency responsibilities for the creation, maintenance, and appropriate disposition of adequate and proper documentation of the activities of the Federal Government.

2. Focus on IRM as a management process to support the accomplishment of agency objectives.

3. Direct agencies to include records management in their IRM reviews.

4. Educate inspectors general and other auditors on documentation requirements and records management laws and regulations so that those requirements will be addressed whenever agency programs are reviewed.

5. Develop a program to make all employees aware of their responsibility to create and maintain adequate and proper documentation of the policies and activities of the Federal Government.

6. Review, consolidate where appropriate, and simplify all regulations and guidance relating to records and information management.

7. Expand on records management policy and program requirements in OMB Circular A-130.

Recommendations relating to the overall management environment in the Federal Government.

1. Determine and articulate an appropriate balance between productivity and efficiency and quality and service in the definition of program objectives, determination of approaches, and evaluation of performance.

2. Work with the President's Council on Management Improvement to influence appropriate Administration officials and members of the Legislative Branch to strengthen management's commitment to quality.

3. Ensure that an integrated approach to information management is included in all program planning processes.

4. Advocate quality in program delivery and records management by:

   a. addressing interagency management groups,

   b. issuing appropriate regulations,

   c. participating in management conferences, and

   d. writing for appropriate publications.

5. Improve internal (agency) incentives for compliance with established information resources management policies and procedures by:

   a. gaining management support

   b. demonstrating direct, program-related benefits,

   c. rewarding co-operation and success, and

   d. penalizing noncompliance.

6. Identify methods of integrating the current budget process, program planning techniques, and IRM management procedures to fully support the accomplishment of Administration and agency objectives.

Conference Report

In June 1989 the Office of Records Administration of the National Archives and Records Administration (NARA) organized a conference entitled "Electronic Records: A Strategic Plan for the 1990's," (to be called in this report "the conference"). The conference was held at the Tidewater Inn, in Easton, MD, June 21-23, 1989. This report summarizes the background of the conference, the issues discussed, and resulting recommendations.

Electronic records can be considered one of the foremost challenges facing the information management community today. There are many reasons for this:

- Electronic records are often not thought of as records and are not subjected to the same controls that are used to manage other records. Program managers and ADP managers are frequently not concerned about the record status of electronic information until their disks fill up and they want to start deleting information.
- The amount of information maintained in electronic form is large and growing.
- Preserving electronic records is a challenge, because they can be easily changed, because the media on which they are stored is fragile and records can be lost through poor maintenance, and because they are often technology-dependent.
- Persons from many different disciplines need to be involved with the management of electronic records.
- Frequently electronic records are not centrally located, but are dispersed throughout an organization.

With these considerations in mind, the Office of Records Administration concluded that it would be productive to bring together experts from a wide variety of backgrounds to address the major issues in electronic records management and to develop recommendations for future action.

The Planning Process

After that decision was reached, it was necessary to determine the most advantageous timing for such a meeting. Three accomplishments were necessary before scheduling the conference:

1. The preparation of revised regulations on electronic records, to be issued jointly by the National Archives and the General Services Administration and published in the *Code of Federal Regulations.* These were issued as a proposed rule in the *Federal Register* on December 5, 1988.

2. The publication by the National Archives of revisions of the General Records Schedules relating to electronic records.

   General Records Schedule 20, Electronic Records, applies to records in central data processing facilities. General Records Schedule 23, Records Common to Most Offices Within Agencies, has items that apply to records created in electronic form in office automation applications. The General Records Schedules contain disposition instructions for records that are common to all or many agencies of the Federal Government. These were published in June 1988.

3. The completion of a report on electronic recordkeeping by the National Academy of Public Administration (NAPA). The report, entitled "The Effects of Electronic Recordkeeping on the Historical Record of the U.S. Government," was issued in January 1989.

With these elements in place, further planning for the conference began. A planning committee was assembled to work with representatives from the Office of Records Administration. This planning committee included senior policy makers representing the full range of disciplines involved in the management of electronic records. The members of the committee were:

Ronald E. Brewer, Tennessee Valley Authority
John W. Coyle, Department of the Interior
Glenn P. Haney, Department of Agriculture
Francis A. McDonough, General Services Administration
Judith J. Newton, National Institute of Standards and Technology
Howard H. Raiken, Department of Energy
Timothy Sprehe, Office of Management and Budget
Kenneth F. Thibodeau, Director of NARA's Center for Electronic Records

The committee recommended that the conference's program consist of general sessions and working groups. The general sessions would survey past and current developments in the field and assess the technological and managerial future. The working groups would each have an assigned topic. The committee also recommended speakers for the general sessions and leaders for the working groups.

Another function of the planning committee was to select participants for the conference. The committee members suggested individuals who represented a wide variety of backgrounds and areas of expertise, as well as many Federal agencies, the judiciary, the Congress, interested professional associations, and the private sector. Those invited were to be senior execu-

tives in positions to effect change in the manner electronic records were managed within their organizations.

The National Archives proceeded to invite the persons named by the planning committee. Sixty-three persons accepted the invitation and attended the conference. They included records managers, information resources managers, ADP managers, data administrators, attorneys, librarians, and archivists. A list of attendees is included as an appendix.

General Sessions

The speakers at the general sessions included: Don W. Wilson, the Archivist of the United States, who gave the welcome; Webb Castor, recently retired Senior Vice President of the Xerox Corporation, who gave his views on the technological future; and John J. Franke, Jr., formerly Assistant Secretary for Administration in the Department of Agriculture, who discussed the managerial future.

Welcome — *Don W. Wilson*

In his welcome Wilson discussed the National Archives and Records Administration and its concerns with records. Records are important to both individuals and institutions. The National Archives is not just a building, it is a body of records—the records of the most important institution in our society. These records provide evidence of the operations of the Government and are one of the basic means for ensuring responsible and responsive Government. In addition, the National Archives provides research and reference sources on many aspects of society for scholars, journalists, and others.

Another important responsibility of the National Archives is working with agencies' records administration programs—establishing controls over the entire life cycle of records. The National Archives helps agencies ensure that necessary records are created, that these records remain available as long as needed, that permanently valuable records are preserved, and that other records are destroyed when they are no longer useful. Basic elements of the National Archives' records administration program are issuing regulations and guidance, providing training, evaluating agency programs, and appraising records to determine their appropriate disposition. This last activity is particularly important because no Federal records may be destroyed without the approval of the Archivist of the United States.

The National Archives decided to sponsor the Electronic Records Conference because of the need to improve the management of records in electronic information systems to ensure their availability to future generations. The National Archives relies upon those who are involved on a daily basis with

electronic systems to ensure that agency programs and activities are adequately documented and that the record is preserved. Finally, the National Archives is ready to commit resources to refining and implementing the recommendations of the Electronic Records Conference.

The Technological Future — *Webb Castor*

In his remarks Castor discussed the Information Age. He said that technology should be viewed as an enabler rather than the driving force. The future holds dramatic changes and enormous opportunities. There are three keys to the technological future: anticipation, innovation, and quality. But the transition is difficult. The three possible reactions to change include rejection, failure to see contradictory information, or adaptation fit. There are three sources of innovation—the very young, older career changers, and tinkerers.

Quality is another key element in technological change. It is important to serve your customers and to make a quality product.

In the United States two-thirds of the research and development dollar is spent on new products and one-third on production systems. In Japan this is reversed. Quality is costly for the first few years, and financial systems that are too bottom-line in orientation can discourage a commitment to quality.

The predominant occupational setting of the work force has changed from agriculture, through manufacturing, to service-oriented industries, with more than half of these last being information services. Now people do things but do not make things, yet most businesses still operate in a manufacturing-oriented model. In the workplace there were 24 million new jobs created from 1975 to 1985. While the revenues of Fortune 500 companies continued to increase, their employment was down. Eighty-five percent of the new jobs are in companies with 100 or fewer employees.

The amount of information is growing rapidly and its "shelf life" becoming briefer and briefer. In the next 20 years there will be 10,000 times as much information as there is today—as if every piece of paper now in existence were to become an encyclopedia. Vast amounts of information must be filtered to produce action. In the future we can anticipate intelligent work stations that will check for relevant information. There is a convergence of three activities into one area—movies, computers, and publishing. So we must consider how to consolidate and deliver information. We must use different, variable media to increase our learning speed and conserve room in our heads by hierarchical orientation.

Today 90 percent of the information in a company is proprietary, but sometimes automation for one purpose fulfills a more important purpose that was not anticipated. So, there is a shift to external, nonproprietary information. There is democratization of the information.

In the 1960's different companies were involved with different aspects of information resources management and a few companies dominated—IBM with data processing, AT&T with communications, and Xerox with document processing. Today there is a convergence of these and there are many other players.

In industry today, 95 percent of information is stored on paper, 4 percent on microfilm, and 1 percent on electronic media. There are two islands—data and documents—these islands need to be linked. Organizations are governed by their information relationships. This results in four technical implications for the future: connectivity, communications, collaboration, and cognition.

An Arthur B. Little study of customers' information resources management needs found these to be: integration of data bases; improved connectivity and compatibility; improved cost/performance; and strategic and operational relevance including productivity improvement and a competitive advantage.

Comparing paper to electronic records, it may be seen that the "paperless office" is far off because of the advantages of paper, including durability, readability, editability, and portability, as well as its status as a universal information exchange medium. Customers need both paper and electronic records for various uses. Connecting the corporate information base means dealing with paper, electronic images, and the electronic content. Technology is developing to allow this connectivity.

Finally, what to look for in the technological future is: scanning—images, OCR, and intelligent; global networks; electronic mail as the primary vehicle for communications; groupware and collaborative software; intelligent work stations; intelligent user interfaces; data/document/information bases with nonlinear access; intelligent storage and retrieval; multifunction devices; distributed functions; multimedia online; hypermedia; dynamic documents; and increased man-machine symbiosis.

The Managerial Future — *John J. Franke, Jr.*

In his address Franke spoke about the need to not only try to determine what the future will be like, but also to prepare for it. He spoke about what the U.S. Department of Agriculture (USDA) is doing to shape the future.

The USDA calls its vision of the future its "Strategic Framework." The title of the document containing this strategic framework is "The Future of Information Resources Management in the United States Department of Agriculture." It describes USDA's view of IRM, between now and 1995. There are four major areas of concern: improving Government management and productivity; improving management of information; improving information delivery to the public; and increasing effective use of technology.

Improved Government management and productivity. In the area of improved Government management and productivity USDA seeks a future of: improved delivery of program services; Department- wide sharing of administrative and program data; and commitment to streamlined methods of delivering services to the public. Accomplishing these goals requires the involvement of the staff. It is essential to have strategies for attracting, hiring, training, motivating, and retaining talented employees.

Individuals can focus on quality and productivity improvement, using steps identified in the President's Council on Management Improvement's 1988 Annual Report to the President. These are: emphasize customer service; train employees in problem-solving skills and seek their participation in improving current operations; reward employees for quality and productivity achievements; set quality and productivity goals for, and require accountability of, managers in meeting these goals; and develop clear quality and productivity measures to track progress.

Improved management of information. Improvements in the way we manage information are needed because we are an information-based society; but, because of technology, we face information overload.

In the electronic environment there is concern about the creation and preservation of and access to records. Some individuals have suggested that if we want to ensure that important records are kept, we should keep everything, since storage costs continue to decrease. However, indiscriminate retention would cause serious problems with retrieval.

Program managers must understand that because technology allows us to create, manipulate, and maintain so much information, we have to be even more diligent in applying good information management practices. Those levying information collection requirements must question the requirements' necessity, usefulness, cost, and collection techniques.

Improved information delivery to the public. There is pressure for increased access to Government information. Improvements in technology make it possible to allow this increased access, but allowing non-Federal personnel to access program information raises policy issues related to security, privacy, and proprietary considerations. By 1995, USDA expects to see changes in the way it provides information to the public, including online access, voice-activated systems for delivery and collection of information, electronic generation and distribution of published reports, and direct electronic interface between the agency and organizations that receive USDA grants.

Increased effectiveness in the use of technology. Even before 1995 arrives, technology will no longer be a barrier in processing and sharing information in USDA. It will also not hinder the establishment of effective data interfaces with external organizations.

The following developments will aid in more effectively using technology: direct links between mainframe computer centers, which will provide for work force leveling and backup capability; implementation of Open Systems Interconnection (OSI), which will allow improved internal information delivery; electronic generation and distribution of reports; employees working at home under certain circumstances because of the flexibility provided by microcomputers and network technologies; increased use of source-data automation, including electronic capture and transmission of administrative data, smart card applications for benefit delivery, hand-held data entry devices, and voice- activated devices; and implementation of information storage and retrieval systems using state-of-the-art technology, such as optical disks.

Making the vision a reality. Accomplishing any vision requires effectively improving program delivery. Some long- and short-term actions at USDA include: development of a centralized philosophy for management of information resources; integration of the various facets of computing technology; utilization of more sophisticated telecommunications systems; and ensuring the availability of qualified IRM specialists, trained end users, and resources to acquire needed technology to implement IRM programs.

It is necessary to reward and recognize people in organizations who get things started. It is also necessary to take risks and to be open to new approaches and innovative ways of doing things.

At the close of his address, Mr. Franke invited the conference participants to develop recommendations relating to the management of electronic records that would be appropriate for him to submit to the President's Council on Management Improvement (PCMI) for action.

The Working Groups

Each of the six working groups at the Electronic Records Conference was made up of approximately 10 participants. Each group dealt with a separate topic. The groups were as follows:

1. Organizational and Individual Responsibilities, led by Belkis Leong-Hong of the Department of Defense.

2. Corporate Information Management — Mission Information Systems, led by Barbara A. Cerny of the Department of Energy.

3. Managing Electronic Records in the Office Environment, led by Alan Proctor of the Federal Trade Commission.

4. Legal and Security Issues, led by Jules S. Romagnoli of the State Department.

5. Records Management and the Design and Implementation of Electronic Information Systems, led by Wallace O. Keene of the National Aeronautics and Space Administration.

6. Collection and Dissemination of Information, led by Fred B. Wood, Office of Technology Assessment, U.S. Congress.

Working Group 1: Organizational and Individual Responsibilities

Scope of Concern:

Recordkeeping and records management are functions that are essential to every government organization and to each individual within those organizations. The longstanding problems facing recordkeeping and records management have been aggravated by electronic recordkeeping.

Issues:

1. The Paperwork Reduction Act (PRA) does not specifically spell out agency responsibilities for records management. Since the Act is being reauthorized, there is an opportunity to correct this.

2. Records management is not a "sexy" issue. Top management, middle management, and working staffs are not aware of their records management responsibilities and are not motivated to take them seriously.

3. Individual program managers are interested in records management only to the extent that it directly affects their immediate program operations and mission accomplishments. But there are others, beyond the program manager, who would benefit from more extensive records management. For example, auditors, top managers who are interested in establishing accountability, Congress, the public, and future generations. How are the interests of these people beyond the immediate program manager accommodated in records management programs?

4. The General Services Administration (GSA), the National Archives and Records Administration (NARA), and the Office of Management and Budget (OMB) share responsibility for issuing records management regulations. However, each has its own issuance system. Agencies should be able to go to one place for records management regulations.

5. The definition of "machine-readable record" needs to be clarified. For example, it is not clear what in a database is a record, what should be saved, how often, etc. Similarly, Computer-Aided Systems Engineering (CASE) and Computer-Aided Design (CAD) systems raise questions.

6. Records management considerations are often not included in automated information systems (AIS).

Recommendations:

1. As part of the comment process on the Paperwork Reduction Act, suggest language clarifying agency responsibilities related to records management. The reauthorization of the Act should explicitly state that records management is part of Information Resources Management (IRM) and specify Federal agency responsibilities related to records management. Agencies should support this change when they are given the opportunity to comment on the proposed legislation. Once the PRA is changed, agency heads should issue memorandums to their organizations to emphasize the importance of records management.

2. Develop an education/awareness program for records management. Include the following:

   - For top and middle management, develop a video of horror and success stories. Use this as a motivational tool.
   - For top and middle management, include records management training in courses such as those taught by the Office of Personnel Management at Kings Point and Denver.
   - For all employees, provide records management training in orientation programs when people first enter on duty and periodically thereafter.
   - For staff involved in IRM-related specialties such as computer systems analysts, ADP procurement staff, legal staff involved with the Freedom of Information and Privacy Acts, and others, provide detailed cross-training in records management.
   - For records management staff, provide cross-training in other IRM disciplines.

   NARA should take the lead in developing the basic course materials and should form interagency working groups to develop interest in using such materials in agency training programs. OPM should include records management in their courses. Agency IRM's should sponsor courses for IRM specialists and records managers to provide cross-training.

3. Build in mechanisms to involve other stakeholders beyond individual program managers in records management, thus expanding the base of support for records management. Include making reviews of records management a specific topic of: Agency IRM reviews, GSA IRM reviews, Office of Inspector General reviews, and General Accounting Office reviews. Ask the President's Council on Management Improvement (PCMI) and the President's Council on Integrity and Efficiency (PCIE) to direct agencies to include records management in overall review programs.

4. Place all records management regulations in GSA's Federal Information Resources Management Regulations (FIRMR). Ask the PCMI to recommend to GSA, OMB, and NARA that they centralize regulations in the FIRMR. The three agencies would need to get together to decide whether and how to implement this change. If the three agencies disagree, they should be required to justify why to the PCMI. If there is agreement, implementation would follow.

5. NARA should develop a clarification of the definition of machine-readable records, solicit comments from agencies, and give the new definition to GSA for publication in the FIRMR. NARA could solicit input from agencies on what their questions are related to defining machine-readable records and use this as a starting point for developing clarification.

6. Establish procedures to involve records managers in the design of automated information systems (AIS). Include requirements for records managers' involvement in agency directives on system development. Use existing AIS review and oversight mechanisms to ensure that records management requirements have been addressed. Assign responsibility for creation, maintenance, and disposition of electronic records during the AIS design phase.

Working Group 2: Corporate Information Management

Scope of Concern:

Records management concerns are particularly crucial in the area of mission information systems—those systems that directly support the mission of the agency.

Issues:

1. Technology is causing the management of records to be isolated from their creation. It used to be that anyone could deal with records because they were on paper, now with the multitude of hardware and software applications, average personnel cannot manage them.

2. There has been a great deal of emphasis on productivity and efficiency in government in recent years with, perhaps not enough emphasis on quality and service.

Recommendations:

1. Balance the emphasis on productivity and efficiency with an emphasis on quality and service.
   - Work through the PCMI to influence OMB and Congress.
   - Develop a task group from this conference to gain Congressional support.
   - Use the "Management by Objectives" process to achieve integration of information management with program objectives.
   - Brief interagency committees to establish broad-based support for the quality and service orientation.
   - Develop a FIRMR Bulletin.
   - Gain visibility for the new focus in the trade press and professional journals to stimulate dialogue.

2. Establish an interagency task group to consolidate and integrate appropriate directives relating to information management.
   - Identify relevant directives.
   - Simplify, consolidate, and integrate.
   - Develop a strategy to maintain the consolidated approach.

3. Revise the call for IRM plans to include discussion of how all aspects of information management (e.g., records management, printing, publications, mail management) support the mission of the agency.

4. Review the impact of the budget process on IRM.
   - Obtain input and ideas from other Government agencies on the impact of the budget process on planning.
   - Initiate discussion with OMB to review consequences of the current budget structure.

5. Develop guidelines to assist agencies in implementing the new focus on quality and service. Identify the payoffs that will accrue from information management and the new focus.

Working Group 3: Managing Electronic Records in the Office Environment

Scope of concern:

Electronic records are created daily by employees as they go about their work in the office using a variety of computer systems. Because there is little centralized control over the creation and use of these records a major concern is ensuring that these records are available as long as necessary.

Issues:

1. The NARA standard for transfer of electronic information places unrealistic burdens on agencies. This tends to discourage agency transfer of permanent records in electronic form.

2. Internal agency standards are often not sufficiently defined to facilitate consistently effective storage of and subsequent access to electronic records. This leads to inconsistent, "idiosyncratic" storage of information.

3. Documents may be duplicated in or omitted from agency storage systems (including individual, work-group, and agency systems) due to a variety of factors including:

   - the absence of procedures that define and structure a system for storing, capturing, and retrieving corporate information;
   - the lack of effective incentives (positive and negative) to encourage compliance with established regulations or requirements; and
   - the lack of individual knowledge of responsibilities and procedures (which is becoming increasingly important as systems are becoming more decentralized).

4. Loss of software necessary to interpret and display documents in their original format. (Note that problems increase with the shift from text to database-type information.)

5. Fragmentation of responsibility for developing and supporting Government-wide records management policies and procedures among NARA, GSA, OMB, GAO, etc. has led to delay in development and implementation of critical policy and inaction on the part of all agencies.

6. Records management programs should be made an integral element of an overall information management program as an extension of the data administration function.

Recommendations:

1. The oversight agencies should support legislative action needed to eliminate the current fragmentation of records management and IRM responsibilities among GSA, NARA, and OMB.

2. NARA should request, and the other oversight agencies should support, funding to enable NARA to acquire permanent records that are not in an archival medium.

3. Agencies should develop standard file storage and retrieval systems to which authors can send electronic copies of documents for storage and adopt procedures and provide sufficient training to assure consistent usage.

4. OPM, GSA, NARA, and individual agencies should develop opportunities for cross-training for data processing and records management staff members, and awareness-training at the work-group level.

5. Government oversight agencies, including OMB, GSA, NARA, and NIST, should get together to fund development of expert systems that would assist in, if not automate, the processes of determining whether a document is a record, how it should be filed, disposed of, and released under the Freedom of Information Act. A preliminary step would be to set up a prototype electronic system through agencies which could inventory and manage their records and electronically transmit records schedules to NARA.

6. Agencies should improve internal incentives for compliance with established IRM policies and procedures by gaining support of senior program managers, demonstrating direct benefits, rewarding cooperation, and penalizing noncompliance.

7. Agencies should develop and implement systems that "embed" records management activities (indexing, storing, determining FOIA and Privacy Act status, and retention and disposition) in processes through which individual documents are created. Such a system could also initiate author review and deletion of preliminary "versions" of final documents (intermediate drafts or notes) not appropriate for retention.

Working Group 4: Legal and Security Issues

Scope of concern:

Electronic records pose a number of special challenges in the areas of determining their legal status and what changes need to be made in laws and regulations to make them applicable to electronic records. In addition, information recorded in electronic form can be particularly vulnerable and this requires attention to security.

Issues:

1. There is a need for a broad policy on computer security.
2. There need to be standards for implementation of technical means (e.g. cryptography or trusted operating systems) to ensure confidentiality, integrity, and legal sufficiency of electronic records.
3. Managerial training concerning legal and security issues brought about by changing information technologies should include coverage of electronic records.
4. The guidelines issued by the Department of the Justice on the admissibility of electronic records as evidence have only been issued in draft form. These need to be finalized.
5. There is a need for more extensive guidelines for release of electronic records under the Freedom of Information and Privacy Acts.

Recommendations:

1. OMB should update Circular A-130, Appendix III, to incorporate requirements of the Computer Security Act of 1987. The PCMI should develop "guidelines" to assist agencies in implementing the requirements.
2. The National Security Agency and the National Institute of Standards and Technology should develop standards for technical means to ensure the confidentiality, integrity, and legal sufficiency of electronic records.
3. The Office of Personnel Management should incorporate material on electronic records into managerial training concerning legal and security issues brought about by changing information technologies.
4. The Department of Justice should finalize and systematically update guidelines on the use of electronic information as evidence.

5. The Department of Justice should develop and maintain guidelines for release of electronically stored information under the existing access statutes.

Working Group 5: Records Management and the Design and Implementation of Electronic Information Systems

Scope of Concern:

It is necessary to effectively and efficiently provide for records management in the design and implementation of electronic information systems. The group defined "records" as information that is recorded on any medium that documents the activities of the Government and is deemed appropriate for preservation for some period of time.

Issues:

1. The pending reauthorization of the Paperwork Reduction Act (PRA) presents an immediate target of opportunity to provide Federal managers with a mandate to broaden their perspective when designing and implementing electronic information systems. This action would also have the very positive result of causing a revision to OMB Circular A-130, which is the implementing guidance for Federal agencies.

2. OMB issued the "Model Framework for Control Over Automated Information System" in 1988 as a guideline to enable managers to easily understand what is required to incorporate controls into the life cycle management of their systems. A modification of this methodology to reflect the needs of the records management community would seem to be a reasonable first step towards involving the records management considerations in the design of automated information systems, however no organization has been assigned to "update and maintain" the methodology.

   If the central agencies (NARA, GSA, OMB, and NIST) are able to designate someone to lead this effort, a major advance will have been taken toward assuring that a broad range of information- related requirements can be understood and, as a consequence, met. The revised methodological guideline could be issued as perhaps a revision to Circular A-130, a change to the FIRMR, or as an NIST series 500 publication.

3. The distribution of draft materials would not only go to all Federal agencies, but care would also have to be taken to ensure that it gets to the people responsible for all relevant functions. Sending the material only to the designated Senior Official for IRM will not necessarily get it reviewed by the FOIA official, who is frequently in the Public Affairs Office, or the Internal Controls officer who is frequently in Finance, or the Privacy Act official who is frequently in Personnel.

4. There are several impediments to undertaking the development effort.

   - There may be a certain amount of apathy on the part of the central agencies. This may be overcome if there is success in modifying the PRA to require a more holistic approach, such as the one now being recommended.
   - There may be a lack of resources to undertake the activity. This might be overcome by providing some examples of what happens when the requirements have to be addressed later, when the system is operational rather than in the system design.
   - Once the document is developed there may be impediments in getting it used, such as general resistance to change, organizational barriers (since every IRM organization in the Government is different), competing priorities for attention, and lack of resources.

5. There is a need to market the results to those who would be required to implement the requirements.

Recommendations:

1. Seize the opportunity at hand with the pending reauthorization of the Paperwork Reduction Act to require the Federal Government to take a more holistic approach to the design and implementation of its electronic information systems with the view that a better integration of records management and other needs will be met.

2. Encourage the central agencies to give someone the job of maintaining a System Development Life Cycle Model around which the requirements for records management and other needs might be brought into a common, easily understood focus.

3. NARA take the lead and seek GSA support in identifying the records management-related system development life cycle framework, using the OMB Model Framework as a guideline.

4. Concurrently develop a marketing program to sell the now integrated view to those who must implement it.

Working Group 6: Information Collection and Dissemination

Scope of Concern:

What are the appropriate roles of the Government and the private sector in collection and dissemination?

Issues:

1. In the area of Government contracts for collection or creation of information, there is a question of whether the contractor should be allowed to profit from marketing information collected at public expense, or should information that the taxpayers paid for be defined as in the public domain and made available like any other information the Government has?

2. Is the Government responsible for disseminating information or merely for making it available? To what extent does private business have a right to profit from the dissemination of public information?

3. What are the roles and responsibilities of Federal agencies in the dissemination of information in electronic form?

4. How can we pay for the information technology related to information collection, storage, dissemination, and preservation?

Recommendations:

1. Federal information dissemination should involve a balancing of public and private sector roles. The Government has the responsibility to ensure that information collected or developed at taxpayers' expense, regardless of format, is available to the public and, where appropriate, is included in dissemination and retention programs.

2. At a minimum, the private sector has the opportunity and should be encouraged to resell or enhance as determined by market forces, publicly available Government information. For information dissemination and collection, any Government agency contracting with the private sector should ensure equitable public access and a level, competitive playing field for vendors.

3. The Government has the highest responsibility to ensure that information about Government policies, procedures, decisions, regulatory proceedings, and other activities is available to the public without hindrance of any sort.

4. The general policy directions in the OMB June 15, 1989, Advance Notice of Federal Information Dissemination Policy and HR 2381, the proposed Information Policy Act of 1989, are commendable and should be further developed. However, a number of key areas identified below are inadequately covered and should be strengthened.

5. The Depository Library Program (DLP) must include electronic information formats, to protect the integrity of this avenue of public access.

6. The primary responsibility for Federal information dissemination should rest with the mission agencies. However, agencies should submit lists of electronic information products to the Government Printing Office (GPO), the National Technical Information Service (NTIS), and NARA.

7. GPO should ensure that the depository libraries are advised of electronic information products and select, subject to availability of funds, items desired for inclusion in the DLP.

8. GPO should include items in the GPO sales program judged to have additional demand not being met by the agencies or where agencies desire to have GPO serve as the primary sales outlet.

9. GPO, NTIS, and NARA should collaborate on the compilation of a Government-wide directory of information products based on individual directories prepared by agencies, and should develop a plan for an integrated, common directory format.

10. The Paperwork Reduction Act should be amended to further strengthen due process and periodic oversight requirements, including periodic rather than permanent reauthorization by Congress.

11. Agency automation planning should explicitly include collection, dissemination, and retention, and should identify ways to fund such activities, including productivity improvements, cost sharing with private sector (used very cautiously to ensure equitable access and competitive equity), more cost-effective media, and user charges.

12. User charges for Federal information dissemination or access should not exceed the agency cost of such activities, with lower or no charges permissible at the discretion of the agency head.

13. The revised OMB Circular and legislation, including HR 2381 and other bills, should explicitly address the roles of GPO, NTIS, and NARA, clarify user charges, and strengthen due process.

Recommendations to the President's Council on Management Improvement

Responding to John Franke's challenge to the conference to develop recommendations to be taken to the President's Council on Management Improvement, a subcommittee met and developed the following items, which were submitted to Mr. Franke on August 15, 1989.

1. Position classification standard for information resources managers.

Issue statement:

The quality of the Federal work force is dependent on the Government's ability to recruit, train, reward, and retain competent, energetic, and creative employees. This is especially true in the field of information resources management. Changes in technology, as well as growth in the amount and complexity of information itself require professional employees who are knowledgeable about the broad spectrum of concerns and able to translate their knowledge into practical applications. The absence of a position classification standard for information resources managers has hampered the Government's ability to recruit and retain such individuals.

Action requested:

Direct the Office of Personnel Management to establish a position classification standard for information resources managers. As part of this process, OPM should determine which job series now otherwise classified should become part of the new series. In addition, there should be both professional and paraprofessional job titles, including grades from entry level through the Senior Executive Service.

Background:

The difficulty of recruiting and retaining personnel trained and experienced in information resources management has been well documented by interagency groups. Groups that have addressed the question include the General Accounting Office, interagency task groups, and the National Academy of Public Administration in their report, "Federal Information Resources Management: Bridging Vision and Action." This report asserts that skills are needed in data administration, standards development, information technology management, information systems project management, information needs assessment, and security and telecommunications

management. Further, the need for individuals with these skills is intensifying as the Federal Government moves from the procurement of information technology to managing information itself. Yet the Government's ability to recruit and retain individuals with these skills in competition with the private sector is hampered by the lack of a professional information resources management position classification standard.

In addition, as it now stands there is a great deal of division among the professions that are part of information resources management. There are many different job classifications. Some are professional and some non-professional. Each has a different grade structure. There is no cross-training and very little cross-communication. None of this promotes the goal of a work force with broad vision and flexibility.

Discussion:

The issue of a separate classification standard for information resources managers has been addressed by a number of groups. An interagency group under the direction of the General Services Administration examined the current classification of individuals working in information resources management disciplines and identified elements appropriate for inclusion in an information resources management classification standard. The Department of Defense has prepared a draft classification standard for an Information Systems Manager job series. DOD's work combined with that of the interagency group should provide the Office of Personnel Management with a basis to pursue the establishment of a new classification standard.

An information resources management classification standard would improve the Government's ability to recruit and retain individuals educated and skilled in information resources management disciplines. It would promote flexibility in job interchange, recruiting, and rewarding individuals. It would establish information resources management as a profession appropriately recognized as critical to the successful delivery of goods and services. Most importantly, it would provide the Government with the personnel resources essential for improving the management of information in support of agency missions and administration objectives.

2. Improve the efficiency of Federal records management programs.

Issue statement:

Increasingly, Federal agencies are turning to automated systems for the control and monitoring of records management programs. Because all agencies have similar records management requirements, because this information will need to be shared among agencies, and because these systems are only now being implemented, there is a unique opportunity to avoid costly duplication and the problems that result when incompatible systems are developed to address common needs.

Action requested:

Establish a PCMI project to identify exemplary automated records management systems and recommend a model standard system.

Background:

The major mechanism for managing recorded information in the Federal Government is the records schedule. Schedules are developed by all Federal agencies and are submitted to the National Archives and Records Administration (NARA) for review and approval. Schedules identify records and the manner and period of time they must be maintained. With the exception of a few agencies, this information is currently collected, recorded, and maintained manually by the agencies and by NARA. Those few agencies which have automated the records scheduling process have realized numerous benefits including: the electronic transfer of information to and from NARA, and to and from offices throughout the agency; the generation of information identifying the location, arrangement, volume, access restrictions, security requirements, and disposition of the records holdings of the agency; the automatic production of reports directing organizational units to effect disposition action (transfer to a Federal records center or agency storage area, destroy, transfer to the National Archives); and the production of management reports to evaluate and improve the manner in which the agency is managing its recorded information.

These systems will substantially reduce the costs of managing recorded information and will improve information available about the records holdings of the Federal Government, which, in turn will result in improved management controls over information.

Discussion:

In 1983 when the Office of Management and Budget directed that there be no more that one personnel and one payroll system per agency (five for the Department of Defense and none for agencies under 6,000 FTE) there were 132 different personnel/payroll systems operating in the Federal government. Five years later the number had dropped to 53 and it is projected that there will only be 10 to 12 personnel/payroll systems operating in the Federal Government by the early 1990's.

This reduction in the number of up-to-date personnel/payroll systems was initiated by those who understood that the use of common data elements provides consistent government-wide data to evaluate operations and aid managerial and policy decisions, and that the economies of scale result in major operational efficiencies in terms of software maintenance, cost of keeping individual records, and improvements in the quality and timeliness of personnel and payroll systems. Those same benefits will result from the development of a standard records management information system. Such a standard will also permit the exchange of information between and among

agencies, a critical requirement since information on agency records must be furnished to the National Archives to obtain the Archivist's approval for the disposal of records. It would permit the National Archives to hold and make available as needed information about the records holdings of the Federal Government. Although currently available in paper form, the information is not readily accessible nor can it be manipulated to provide managers with the information needed for program planning purposes. The model should include information on the information collection and dissemination activities of each agency since information collection becomes a part of the records holdings of the Government and dissemination products are based on and become a part of records systems.

Based on the study, a set of core requirements should be developed for a standard records management information system. All future automation of records management control systems would have to meet these requirements.

3. Model information resources management organization.

Issue statement:

The integration of information management activities to achieve the goal of handling information as a resource in the most productive and cost effective manner has not happened.

Action requested:

Recommend a model information resources management program.

Background:

The purposes of the Paperwork Reduction Act are very clear: minimize the private paperwork burden and the Federal cost of information handling, maximize the usefulness of the information, establish uniform Federal information policies and practices, ensure that ADP and telecommunications technologies are obtained and used to maximum effectiveness and efficiency, and ensure that confidentiality is maintained in Federal information handling systems. To achieve these goals, the framers of the Paperwork Reduction Act envisioned a management system that would bring together previously dispersed functions such as automated data processing, telecommunications, office automation, information systems development, and data and records management under one management structure to move information management from its traditional occupation with technology to a serious emphasis on the content of the information itself. This management structure has become known as information resources management.

Discussion:

When the concept of information resources management was conceived and initially implemented it was a bold new direction, based on the idea that information is an important resource for government operations and must be managed. Unfortunately, the concept of information resources management as a management tool has not been thoroughly tested, largely because agencies have been slow to fully integrate all aspects of IRM into a single program.

Organizational structures, assignment of responsibilities, delegations of authorities, and other management processes that have been or should be successful in advancing the integrated management of information resources should be identified. A model program or successful programs (or part of programs) should be identified and advocated. A very selective, high visibility award for the information management program most closely approximating the goal of integration, which is highly supportive of agency and administration goals, should be considered.

4. Integrate the management of information with the management of information technology.

Issue statement:

The focus of management systems within the Federal Government over the last several years has been the procurement of technology. The objectives have been to ensure that the Government acquires technology to support its information handling requirements in the most cost-effective and efficient manner. With the emphasis on technology acquisition, insufficient regard has been paid to the management of the information itself. Consequently, significant information management processes have not been considered in the design, development, acquisition and implementation of information technology.

Action requested:

Direct an interagency working group to incorporate records management considerations into the "Model Framework for Management Control Over Automated Information Systems," and to ensure that the provisions in the model are known to and adopted by agencies.

Background:

In January 1988, the PCMI and the President's Council on Integrity and Efficiency jointly published a report titled "Model Framework for Management Control Over Automated Information Systems." This report acknowledged that managers need basic tools to provide reasonable, documentable assurance that the information processed by automated information systems is accurate, complete, timely, and authorized, and that the systems are

secure and auditable. According to the report "Future audits and reviews by OMB, Inspectors General, the GAO, and others will seek evidence of compliance with these control requirements." One of the control requirements is that "records retention procedures exist—each agency must establish procedures as to retention, archiving, and destruction of data files." However, the authority for the requirement is the Privacy Act which has a specific application in terms of access and retention in relationship to systems containing personal information. The Federal Records Act which applies to all records of the Federal Government and includes the requirement to create and maintain adequate and proper documentation is not cited in the report as a governing directive.

Discussion:

Many automated information systems in the Federal Government have been designed, procured, and implemented without addressing some basic records management issues. The length of time the information is needed and by whom, the need for information outside the creating or maintaining agency, and the ability of the automated system to meet all accountability requirements are issues that are often overlooked. For example, the final disposition of the information maintained in the automated system once it has served the agency's purposes is frequently not considered in the design, implementation, and operation phases of the information system life-cycle. A review of system development life-cycle management documents produced by a number of different agencies reveals a lack of attention to records management concerns. As more and more information supporting basic agency programs is being collected, maintained, and disseminated electronically the need to address these issues has intensified. The need to identify the length of time information must be maintained in automated systems, to dispose of that which is no longer needed and to preserve that which has long-term value, intensifies as the volume of information and the associated costs to maintain increases.

Building records management considerations into existing, accepted models for information systems design and implementation will ensure that the complete life-cycle of the information, from creation/collection through final disposition is addressed. It will eliminate the costs to the Government of maintaining and managing information which is no longer needed, will ensure that information of long-term value to the Government and the people its serves is maintained, and will simplify access by providing controls over information of long-term value.

Summary of Progress and Planned Actions

Actions Begun

1. Position classification standard for information resources managers.

In September 1989, the President's Council on Management Improvement requested that the Office of Personnel Management (OPM) consider the possibility of establishing a position classification standard for information resources managers. OPM replied that they had already looked at this question in conjunction with the Department of Defense and the General Services Administration. Their primary efforts involved defining the kinds of work that would be included under such a series, what qualifications are required to do the work, and what sources exist for recruiting qualified applicants. Defining these factors is usually considered necessary for setting up a new classification series.

OPM did not feel that these factors have been shown to be sufficiently definable to justify setting up a new classification standard. They pointed out that the General Administrative, Computer Specialist, and Communications Management Series cover the types of work that OPM has been able to identify as proposed for inclusion in the new series. However, recognizing the importance to agencies of being able to recruit and retain a high quality work force, OPM expressed its willingness to continue to look into this matter.

2. Integrating records management into the information systems life cycle.

In August 1989, the FIRMR Advisory Council considered the issue of incorporating records considerations into the information systems life cycle planning. As a result of that meeting, the General Services Administration (GSA) decided to devote staff time to developing a pamphlet that shows the records management actions to be taken at each stage in the development of an automated information system. The pamphlet is currently in production.

In February 1990, Mary Ann Wallace from the National Archives and Wallace Keene addressed the Systems Committee of the President's Council on Management Improvement on the need to update the "Model Framework for Management Control Over Automated Information Systems" to include records management considerations. The Committee decided the project should be undertaken as a PCMI initiative.

3. Adding records management to OMB circular A-130: The Management of Federal Information Resources.

The National Archives has drafted and submitted to the Office of Management and Budget an appendix to Circular A-130. OMB is considering the best approach to incorporating this information in A-130.

4. Automated Records Management System

Also in February 1990, Mary Ann Wallace addressed the Systems Committee of the PCMI on the benefits to be gained from the identification of an exemplary automated records management system and from recommending a standard system. The Systems Committee saw the wisdom of avoiding the kind of multiplicity of systems that had occurred in other areas such as payroll and personnel and has adopted the project as a PCMI initiative.

5. Evaluate electronic records management

The National Archives is currently evaluating electronic records management in selected agencies of the Department of Transportation and the Environmental Protection Agency. Reports on these evaluations will be available in early 1991.

Planned Actions

The following are actions that the National Archives and Records Administration will undertake to implement the recommendations of the conference.

1. Promoting the incorporation of records management into the automated information systems development life cycle.

NARA staff will write articles on this subject to submit to periodicals. In each case the article will be focused on the particular concerns of the audience of that publication.

NARA will develop a poster that promotes this concept as part of its records management poster series.

NARA will develop several briefings on the subject that can be presented to relevant audiences. One briefing, reviewing the records management concerns to be considered in the system life cycle, will be aimed primarily at educating records managers. Another briefing will be specifically developed for groups who are beginning to plan an information system and will focus on the incorporation of archival and records management requirements.

NARA will establish an interagency work group to identify and define the archival and records management requirements that must be addressed in the design and implementation of electronic information systems.

NARA, with the assistance of the other central agencies and operating agencies, will translate archival and records management concerns into appropriate Federal regulations and guidance on information resources and/or records management. NARA will periodically issue reports on how the National Archives and the Bureau of Land Management records management staff worked together to ensure that records management concerns were included in the planning for the Automated Land Management Records System.

NARA will make available a model agency directive about records management in the automated information system life cycle.

2. Cross-training

NARA will develop a cross-training plan for familiarizing ADP and records management personnel with each other's disciplines. The cross-training plan will include recommended courses, suggested on-the-job training, and reading lists.

NARA will develop a one-hour briefing on records management for ADP managers. The briefing will cover the basic concepts of records management, such as adequacy of documentation, recordkeeping requirements, and disposition.

3. Pamphlet for auditors

NARA will develop a pamphlet for auditors and Inspectors General giving guidelines for adding records management to the scope of their reviews.

4. Electronic records directive

NARA will identify or create a model agency directive on electronic records or the elements of such a directive and make this available to other agencies to use in developing their own.

Appendix: Conference Participants

John E. Anderson, National Library of Medicine
Richard E. Barry, World Bank
Jane A. Benoit, Department of Agriculture
Rose Marie Berezowsky, Bureau of Land Management
Jane Bortnick, Congressional Research Service
Ronald E. Brewer, Tennessee Valley Authority
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Barbara A. Cerny, Department of Energy
John W. Chandler, Department of Transportation
John Chapman, Government Printing Office
Lawrence S. Cohan, General Services Administration
Katherine V. Coram, National Archives and Records Administration
John W. Coyle, Department of the Interior
Dan Cragg, Office of the Secretary of Defense
Michael J. Curro, General Accounting Office
Mary H. Davis, Forest Service
Richard M. Davis, National Oceanic and Atmospheric Administration
John Dinneen, Department of Labor
Charles M. Dollar, National Archives and Records Administration
Daniel J. Drake, Logistics Management Institute
Constance D. Drew, Department of the Treasury
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Cathy McAuliffe, Social Security Administration
Francis A. McDonough, General Services Administration
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